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Instruction in Handwriting in Ontario Schools

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Instruction in Handwriting in Ontario Schools

A. Blaine Currie

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Table of Contents

		Page
Introduction		1
1.	Current Handwriting Practices and Views on Handwriting Instruction in the Elementary Grades	3
2.	Handwriting Instruction for Pre-School and Kindergarten Children	9
3.	Handwriting Instruction in Grades I and 2	15
4.	Handwriting Instruction in Grades 3 to 6	26
5.	Evaluation of Students' Handwriting	35
6.	Special adaptations for Left-handed Students and Children with Learning Disabilities	39

Introduction

This Review and Evaluation Bulletin is based on the results of a research study on handwriting instruction in Ontario schools, funded under contract by the Ontario Ministry of Education, and conducted by Stephen B. Lawton, principal investigator, and A. Blaine Currie. The complete report, which outlines the results of the study in detail, entitled Handwriting: I. Instruction in Handwriting in Ontario Schools; II. Handwriting: An Annotated Bibliography, can be obtained from the Ontario Government Bookstore or from the Publication Sales Office of the Ontario Institute for Studies in Education.

As was indicated in the introduction to the original research study, its purpose was to describe the methodologies principally used in Ontario schools to teach handwriting in the Primary and Junior Divisions; to explain the empirical basis of each methodology; to measure the effectiveness of each method in the development of legible handwriting; and to assess the effect of each methodology on the attitude of the student toward learning. In addition, a literature review was to be undertaken in order to provide the basis for a support document in the "Curriculum Ideas for Teachers" series and to provide information that would be of assistance in the professional preparation and development of teachers.

In order to fulfill these objectives, the researchers examined curriculum guidelines in English and the Language Arts from a sample of public and separate Ontario school boards; reviewed existing research related to the components of instruction in handwriting; observed actual handwriting classes in a sample of elementary schools selected from public and separate boards; collected handwriting samples from students in all grade levels of the schools visited; and interviewed teachers, principals, consultants and students regarding their attitudes toward current handwriting instructional practices and recommendations for future improvements.

Anyone wishing to examine the authors' detailed research findings in the five areas outlined in the previous paragraph, in addition to a comprehensive literature review and an explanation of the research strategy, including data collection and analysis, should consult the original handwriting study. However, readers not wishing such detail should find the present Review and Evaluation Bulletin sufficient, insofar as it provides highlights from the original study without giving the detailed analyses.

The "question and answer" format of the Bulletin presents 35 of the questions most often asked by teachers and parents, and then follows each question with an answer derived from the original handwriting study. The first group of questions (1 - 9) deals with current handwriting practices in Ontario schools and gives some general views on how handwriting should be taught in the Primary and Junior Divisions; section two (questions 10 - 13) considers handwriting for Pre-School and Kindergarten children; section three (questions 14 - 21) presents ideas for printing instruction in grades 1 and 2; section four (questions 22 - 28) deals with handwriting in grades 3 to 6; section five (questions 29 - 30) considers ways of evaluating students' handwriting; and section six (questions 31 - 34) suggests ways of improving handwriting instruction for left-handed students and children with learning disabilities. The final question (35) considers possible future directions for handwriting instruction in Ontario schools.

1 Current Handwriting Practices and Views on Handwriting Instruction in the Elementary Grades

1. WHY DO TEACHERS SEEM TO BE PLACING LESS EMPHASIS ON HANDWRITING TODAY THAN THEY DID EARLIER IN THE CENTURY?

There is no doubt that instruction in handwriting has fallen in priority during the last several decades, and the reasons appear to be fairly obvious. In the early 1900s, much attention was given to the teaching of "penmanship" with emphasis on drill exercises, proper letter forms, and a highly legible writing style. During the twenties and thirties, however, many teachers rebelled against the narrowness in this rigorous discipline and argued for a more integrated approach, whereby the learning of handwriting skills could be combined with reading, spelling, and composition. This new philosophy, in conjunction with the need to drop fads and frills during the 1930's depression, caused the elimination of specialization in handwriting instruction by teachers, so that by the early 1940s, few colleges were preparing teachers for handwriting programs in the elementary grades. By mid-century other innovations received the major attention in educational circles, while the "basics" seemed to be crowded into the background.

Today many teachers in Ontario feel that there is not enough time to direct a large segment of their instructional energies toward handwriting. New programs in French, music, art, and other subjects take time away from the teaching of certain basic skills. Most teachers feel that these new programs are of greater importance to the student than is the ability to write in a highly legible or decorative manner; they feel that the school should be responsible for teaching and maintaining only a moderate level of skill in printing and handwriting. Teachers are, for

the most part, left to decide how much time they will allot for instruction in printing and writing, and the standards that students are expected to achieve.

2. AT THE PRESENT TIME, HOW WELL DO STUDENTS IN ONTARIO ACTUALLY WRITE?

The results of the original Ministry of Education study on handwriting instruction found that the overall legibility of printing and writing in samples produced by students at various grade levels was moderately high, with very few students displaying real difficulty in reproducing basic letter forms in an acceptable manner. The variation in refinement of these writing skills among students, however, was quite noticeable, being more pronounced among students within any given school than among schools.

In the final analysis the writers of this report concluded that the emphasis placed on handwriting skills within individual schools was the most important factor in determining the quality of handwriting. Where consultants, principals and teachers had prepared comprehensive handwriting programs, the degree of ability on the part of students in this regard appreared to be greatest. In other words, those students who attended schools where handwriting instruction was stressed as an important skill had a better chance of becoming more skillful writers, all other things being equal. Of course, as was suggested in the previous paragraph, there are many developmental factors that must also be considered; some students will be "poor" writers regardless of the type of program, while others will excel in this area in spite of very little emphasis being placed on writing skills by the teacher. However, in those schools visited, when more emphasis was placed on handwriting ability, the overall quality of writing, in terms of legibility, was generally higher.

3. WHAT IS CURRENTLY BEING STRESSED IN ONTARIO SCHOOL BOARD GUIDELINES WITH REGARD TO HANDWRITING INSTRUCTION?

All school board guidelines reviewed in the course of the original study were remarkably similar in terms of objectives, methods of instruction, and evaluation procedures. For the most part, these guidelines suggested that the aims of handwriting instruction are to teach students to write in a legible manner; to write with a flowing style that promotes a reasonable amount of speed; to write with ease; and to understand that handwriting is an important communication tool to be used in the expression of one's thoughts and ideas. Several of the guidelines stressed the aesthetic as well as the functional nature of the task, suggesting that handwriting should be viewed as a type of artistic endeavour, requiring attention to proper letter forms and a flowing artistic style. Most, however, put primary emphasis on the communications aspect of handwritten work.

4. WHAT MIGHT A TYPICAL HANDWRITING CLASS LOOK LIKE IN AN ONTARIO ELEMENTARY SCHOOL?

In Ontario schools teachers usually begin handwriting lessons by demonstrating the letter forms on the chalkboard, and then having students reproduce these forms, in the air or on the surface of the desk, using large arm movements. Once several "invisible" letters have been made in this manner, it is suggested that the students copy the letters on the chalkboard or in their notebooks. In some cases tracing exercises are suggested, using work sheets, but copying is a much more popular method of practice in the majority of Ontario's handwriting programs.

In some cases, general letter formational rules are also presented by the teacher. As the letter is being taught, the teacher describes the basic rules that govern the formation of all individual letters or families of letters. For example, in printing most teachers using the "ball and stick" approach require

that all strokes be made from top to bottom or from left to right, and that circles be made in a counterclockwise motion. In the case of written script, several teachers recommend that all down-strokes should be straight and parallel while all up-strokes should be curved; that all small letters and words should end with an up stroke; and that students should complete the entire word before dotting i's and j's, crossing t's and x's, and inserting apostrophes. As well as giving general instruction for the entire class, the teacher also supervises individual students as they complete copying and tracing exercises at their seats. Because it is possible to make letters incorrectly, yet end up with letters which look correct, teachers must try to spot errors in letter formation as they occur. In addition to ensuring that students master letter formation and proper letter shape, the teacher also sees that they produce uniform slant, spacing and size, and develop a reasonable amount of speed.

5. IS THERE ANY "BEST" WAY TO TEACH HANDWRITING IN THE ELEMENTARY GRADES?

Because of differing viewpoints as to how children grow and develop, educators have suggested many different ways of teaching students in the school setting. In the case of handwriting, a variety of techniques have been employed, some grounded in complex developmental theories and others based solely on traditional teaching methods and informal classroom experimentation. Although many educators are convinced of the power of their handwriting programs to produce the highest quality of writing, suffering the least deterioration over time, it is not apparent that any single, foolproof method exists which consistently produces top-quality results. Teachers are therefore advised to use those approaches which they find most successful and which are most compatible with the remainder of the school program.

6. SHOULD TEACHERS WITHIN A SCHOOL USE THE SAME PRINTED AND WRITTEN LETTER FORMS?

Yes, definitely. A great many students and teachers complain about the wide variety of letter forms used within their school. These often cause confusion when a child moves from one class or grade level to the next class or grade level. In order to avoid such unnecessary frustration for students, uniform print and written alphabets should be adopted for the entire school.

7. APPROXIMATELY HOW MUCH TIME SHOULD BE DEVOTED TO HANDWRITING INSTRUCTION IN THE ELEMENTARY GRADES?

Although there is obviously no definitive answer to this question, it is most often recommended that in the early grades (Kindergarten through grade 4) formal handwriting instruction be given in 10- to 15-minute sessions, five days per week. Then, by grades 5 and 6, the number of quarter-hour sessions is usually reduced to two or three. Without continued drill and practice, it is felt that the skills learned in the first four grades might decay, and that improvement would cease. In grades 7 and 8, teachers should periodically evaluate students' handwriting in written assignments and provide individual and group assistance when problems in legibility occur. At this level, insisting that all formal written assignments be legible is probably more important than providing additional class instruction.

8. WHY DOES IT SEEM THAT GIRLS ARE ALWAYS BETTER AT HANDWRITING THAN ARE BOYS?

Several studies conducted in North America show that there actually is a difference in handwriting quality between boys and girls, with girls generally superior in terms of legibility and overall writing speed. It is at present not clear whether such

differences are related to biological and developmental factors or due to cultural influences and conditioning processes. However, girls do appear to excel first at those tasks requiring fine motor control, such as handwriting, whereas boys first excel at those tasks requiring gross motor control, such as athletics.

9. IS IT TRUE THAT THE QUALITY OF STUDENTS' HANDWRITING IS RELATED TO THEIR OVERALL ACHIEVEMENT IN SCHOOL?

No correlation has been found between students' I.Q. or academic potential and their handwriting quality. Still, many parents feel that poor handwriting is an indication either that their child is generally doing poorly in school or that the school is providing a poor-quality education. Neither is necessarily true, and parents should not therefore use handwriting as an index of how well their child is performing academically.

Some educators have attempted to determine what effect, if any, handwriting quality has on students' essay grades, but the results to date have proved to be inconclusive. It may be that in some cases teachers do give higher marks to essays that are written legibly because they are easiest to read, and therefore appear to have a more flowing composition. Also, it may be that, for some children who write very slowly and poorly, the effort placed on making words and letters detracts from their ability to concentrate on what they are saying. But both situations appear to be more the exception than the rule.

2 Handwriting Instruction for Pre-School and Kindergarten Children

10. WHAT LEVEL OF MATURITY MUST BE ATTAINED BY CHILDREN BEFORE THEY BEGIN HANDWRITING INSTRUCTION?

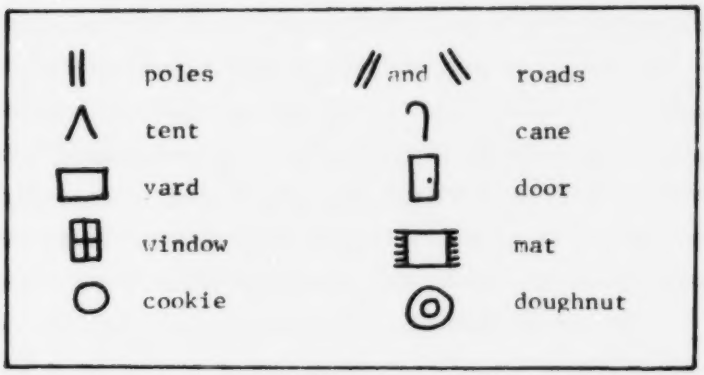
Because the ability to write involves both visual and muscular elements, it is essential that a child attain an adequate level of maturity in both of these areas before formal handwriting instruction is begun. According to child development experts, a student must have five interrelated perceptual and muscular abilities in order to write: (1) the capacity to perceive objects, pictures, and parts of a whole, and to be able to discriminate among parts ; (2) the ability to see positions in space; (3) the ability to mentally reconstruct what has been seen by the eye; (4) the ability to reproduce on paper what has been mentally reconstructed; and (5) the ability to remember complex details necessary for the production of what has been perceived. When any one or more of these abilities are lacking, handwriting problems will probably arise. Therefore, it is generally agreed that students should not be expected to learn printing formally until Senior Kindergarten or grade 1.

11. WHAT SORTS OF HANDWRITING ACTIVITIES SHOULD BE TAUGHT IN KINDERGARTEN CLASSES?

Because most educators have adopted a developmental view of childrens' learning, they teach activities that require visual and muscular coordination, such as handwriting, in a sequence of learning tasks involving increasingly complex skills. Kindergarten is seen to be a time for developing childrens' basic motor or muscular skills, and students are involved in a series of activities which develop muscle control and eye-hand co-ordination. At this time teachers observe individual children

at play in order to determine their degree of motor control and visual ability. This assessment enables the teachers to determine which children are ready to learn to write, and to select the most appropriate learning materials for the group.

Readiness activities for the Kindergarten student usually begin with haphazard scribbling and evolve into the drawing of simple objects, drawing more complex subjects, and then imitating, tracing or reproducing what the teacher prints on the chalkboard or paper. Once the children can form circles and horizontal, vertical and diagonal lines, they are ready to begin printing. An example of typical readiness designs is given below:



Printing readiness activities can also be made more interesting by having the teacher recite a poem (like the one presented below) and illustrate it on the chalkboard, while the students listen and copy. Once they understand the procedure involved, students can create their own designs as the teacher recites. This encourages students to listen carefully and also to use their own imaginations for creating interesting designs.

PLAYTIME*

I found some puddles

When I went out to play,

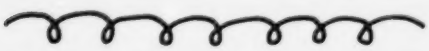
The sun came shining

And my puddles went away.

I got out my skipping rope,

As happy as could be,

And I skipped and I skipped



And then hurried home for tea.

---

*"Playtime" appears in the Ottawa Board of Education's Kindergarten Resource Booklet, p.829

In order to provide sensory feedback for students learning to print, letters cut from felt or sandpaper can be used, so that the students can trace over the letter shape and get a "feeling" for how the letter is formed on a two-dimensional surface. The textured surface of these cut-out letters has produced excellent results with children having problems in mastering proper letter shapes.

Initial letters in Kindergarten are usually made with a paintbrush, marker, crayon or chalk on newsprint or other unlined surface, using large arm movements rather than the fine hand and finger movements required when pencils or other small-point writing instruments are used. Teachers may also have students form letters with a finger in a sand box, or with rolls of modelling clay. Once the basic letters have been mastered on newsprint or chalkboard, the teacher may then proceed to have students manipulate large printing pencils on regular-sized unlined paper. As the motor skills of the students develop, the size of the letters is gradually reduced. Quite often, newsprint is folded into smaller and smaller sections so that one complete letter or design fills each section of the folded page.

In many instances, the first letters learned by children are those which comprise their first names. This is not only highly motivating for the children, but also aids the teacher in identifying a student's work when the children can print their own names on their assignments. When letters are first presented to children, teachers usually describe the letters as they are forming them. In some cases rhymes are used, which relate the letter to its sound and also to an object that looks like the letter.

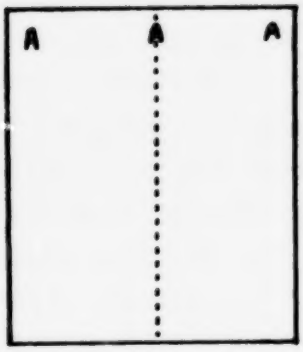
Because a letter which looks perfect could have been formed improperly, teachers should watch how the child creates each character. To ensure effective supervision, small groups of students can be taught one group at a time, while the remainder of the class is engaged in other activities.

12. SHOULD PARENTS BE ENCOURAGED TO TEACH PRINTING TO THEIR CHILDREN BEFORE THEY BEGIN KINDERGARTEN?

Many teachers are very concerned about the difficulties that arise when students come to school with a complete knowledge of letter formation. In one school, a teacher estimated that over one-quarter of the beginning students typically know how to reproduce the entire alphabet. Those students who do know alphabetic characters most often form them in a haphazard manner, causing real proeblems when teachers attempt to have the letters formed according to their own models. One school has attempted to ameliorate this problem by contacting parents of pre-schoolers one year prior to Kindergarten entry, so that alphabet cards, with proper letter formation indicated, can be used by those parents desiring to teach the alphabet at home. Although the letters may be formed properly when parents use these alphabet cards, there still remains the problem of pencil holding, paper positioning and postural considerations. It has been suggested by many teachers that if students hold their pencil improperly at the beginning then they will always do so. Given the large number of students in Kindergarten classes, it is virtually impossible to re-teach skills improperly learned at home.

13. HOW CAN TEACHERS HELP THEIR STUDENTS ACHIEVE A SENSE OF LEFT-TO-RIGHT DIRECTIONALITY FOR PRINTING ACROSS A PAGE?

Although we tend to take for granted the fact that printing and reading proceed from left to right, beginning printers and readers do not always have this same sense of direction. In order to help these students achieve a proper sense of printing or writing progression, teachers might use the following exercise:



Have students fold a piece of newsprint vertically down the centre. Once this has been completed, ask each student to print an upper or lower case letter at the beginning (left), middle (over the paper crease), and end (right) of the page. Row after row can be completed until the newsprint sheet is completely filled.

3 Handwriting Instruction in Grades 1 and 2

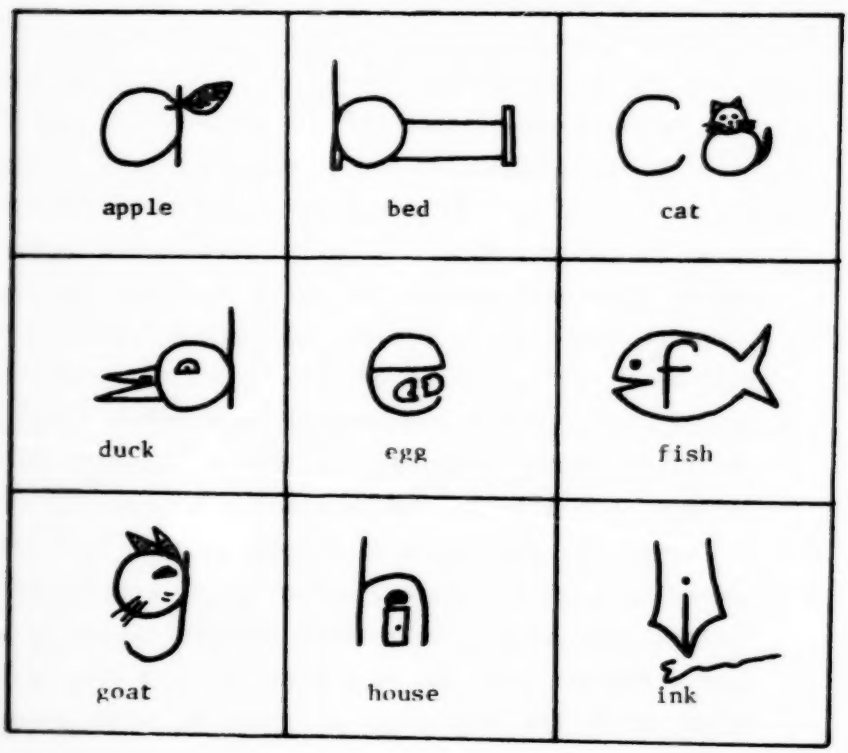
14. WHAT AIMS AND OBJECTIVES SHOULD TEACHERS HAVE IN MIND WHEN TEACHING PRINTING IN GRADES 1 AND 2?

As was indicated earlier, most students now learn the basic printed alphabet letters in Kindergarten, so that in grade 1, the objectives are: to improve basic printing skills by having the child write on lined paper and keep between the lines; to space letters and words properly; and to gradually decrease letter size as the child's muscle co-ordination improves in the course of the year. Continued practice in proper letter forms, paper and hand position, and posture are also essential in order to instill good writing habits.

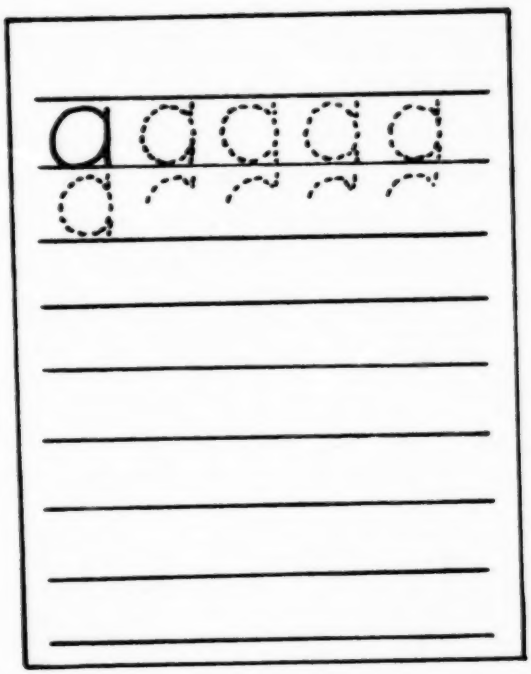
Handwriting instruction in grade 2 is usually aimed at refining printing skills and developing a neatly organized printing style. In most Ontario schools, increased legibility is seen to be the primary objective, with speed seldom emphasized. It is argued that only having the child form the letters slowly but correctly will cause a neat and legible style to emerge. The refinement process also entails a further reduction in basic letter size, with a movement to more narrow-lined paper. This reduction process requires the student not only to make smaller letters, but also to reduce spacing between individual letters and words. In some schools, cursive writing is introduced in the second half of the grade 2 school year, with lower case written letters and upper case printed letters typically used at this time. However, for the most part, cursive writing is not introduced until the beginning of grade 3, with grade 2 printing activities devoted to improving the basic skills learned in Kindergarten and grade 1.

15. HOW CAN A TEACHER HELP STUDENTS REMEMBER UPPER AND LOWER CASE PRINTED LETTERS?

In order to have students internalize shapes of individual alphabet characters, a visual alphabet, like the partial one illustrated below, can be created. By having students associate the letter shape "A" with the corresponding picture of the "apple," in which that letter is contained, additional cues for proper letter formation are provided for the child. Students can also be asked to create their own picture alphabet, drawing figures which have special meaning for themselves.



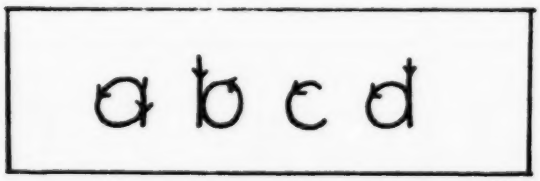
Teachers might also consider using work sheets with tracing and copying exercises. For example, the first letter on the page could be formed with a solid line, the next letters with dotted lines, and the ones following with only a few dots marking the beginning of the letters. The remainder of the page would then be left blank. A child using this sheet would trace over the dotted letters with a pencil, complete the letters following the beginning dots, and then copy more of the given letters in the remainder of the blank page. Through this gradual decrease in clues, it is felt that students will find it easier to internalize or memorize the letter shapes while forming them properly.



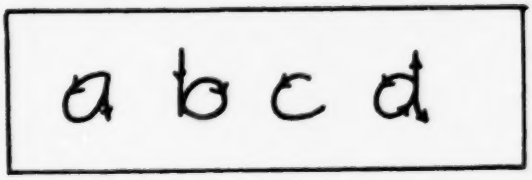
In some schools teachers give students small cards with all of the letters of the alphabet printed on them, so that students can have easy access to proper written and printed letter forms. Teachers who provide these cards are often concerned about the ability of some students to accurately copy letters from models at the front of the room to notebooks on their desks.

16. WHAT IS THE DIFFERENCE BETWEEN "BALL AND STICK" AND "CONTINUOUS STROKE" PRINTED LETTERS?

Using the "ball and stick" approach, all upper and lower case printed letters can be formed from horizontal, vertical and diagonal strokes, and counter-clockwise circles. In all cases, the strokes are to be made in a top-to-bottom and left-to-right progression to promote uniform letter size and also to instill a sense of left-to-right direction across the page, a visual and muscular ability necessary for flowing and rapid movement in both reading and writing exercises. (Left-handed students may be permitted to make clockwise rather than counter-clockwise circles.) Examples of ball and stick letters are given below (arrows indicate the direction of the basic strokes):

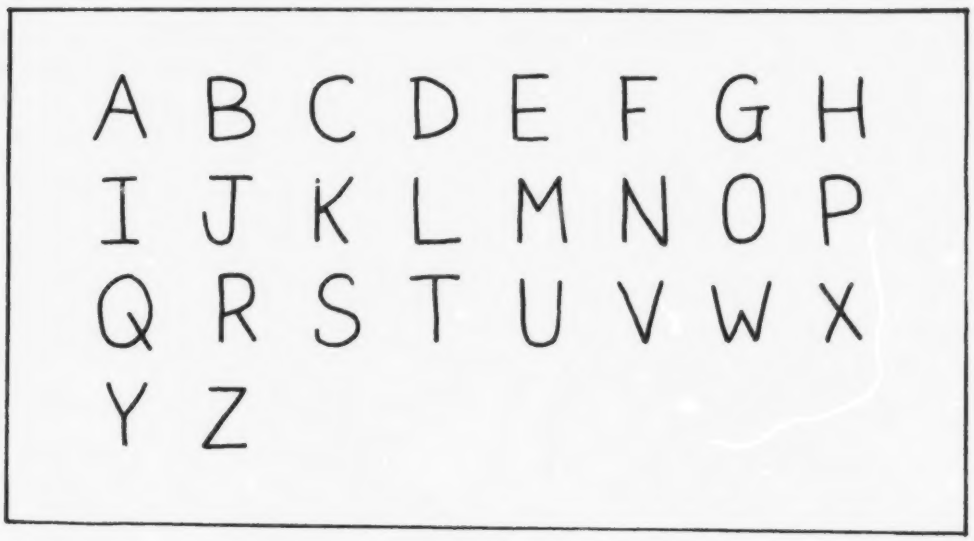


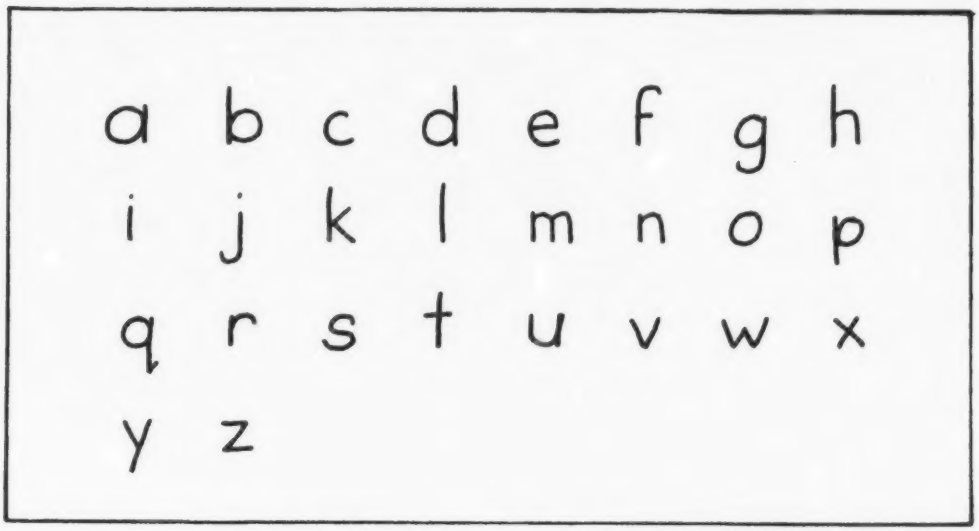
"Continuous stroke" letters, as the name suggests, enable the child to form most lower case letters without lifting the pencil from the page. Letter forms using this technique are more similar to a flowing written script, and are in fact most often used by those teachers who believe that the transition to writing in grade 2 or 3 will be made more easily by students using continuous-stroke print. No proof has yet been found for this claim. Examples of these letters are given below:



17. WHAT PRINTED LETTER FORMS ARE TYPICALLY USED BY TEACHERS IN ONTARIO SCHOOLS?

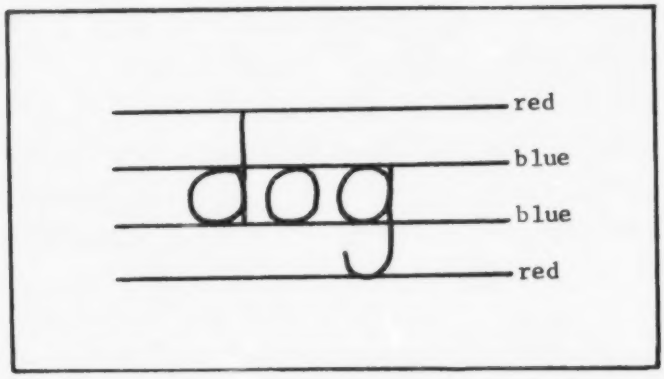
Most often, printed alphabets are of "ball and stick" form.



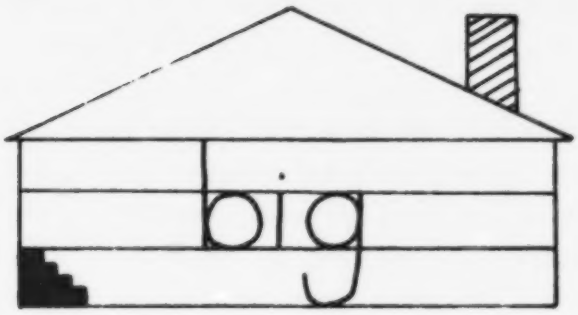


18. HOW CAN A TEACHER HELP STUDENTS TO FORM LETTERS PROPERLY BETWEEN THE LINES?

Many schools use "red, blue, blue, red" lined paper, in order to aid students form letters properly between the lines. The body of the letter remains between the blue lines, while the tails go below to the bottom red line, and the high letters go above to the upper red line. This paper comes in a variety of line widths (1", 7/16", 5/16", 1/4") so that as students become more skilful, they can switch to more narrowly ruled notebooks. Some teachers actually line the chalkboard in a similar manner, so that copying from board to notebook is easier for the students.



Some teachers find that a poster containing an outline drawing of a house (like the one illustrated below) helps students remember in which space they should draw the various parts of a printed letter. The words "upstairs," "downstairs," and "basement" have meanings, for these students, which can often be transferred to the lined spaces on their paper. If the teacher uses such terminology in teaching letter formation initially, then students will also begin to use it in creating the letter forms themselves.

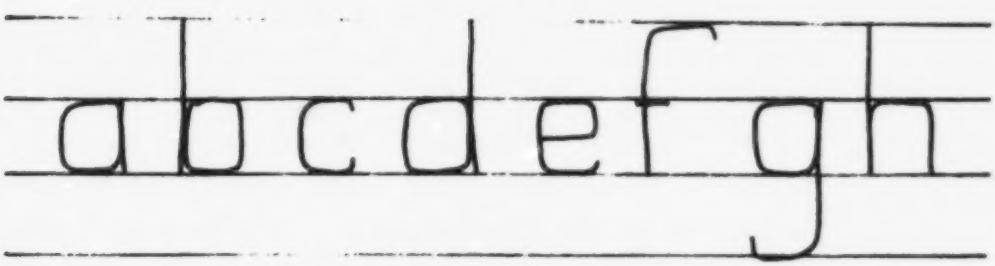


upstairs (bedroom)

downstairs (kitchen)

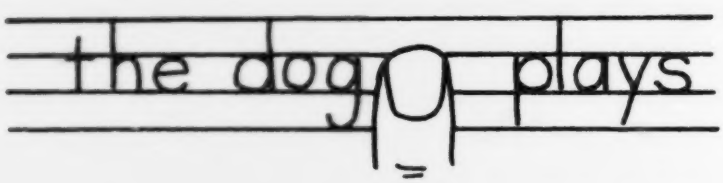
basement (cellar)

One Grade 1 teacher, finding that her students were forming lower case printed letters poorly, created a box-like printing style (like that illustrated below) which caused her students to form rounded boxes instead of circles, usually employed in the "ball and stick" method of printing. By having her students move their pencils along the upper line and baseline, uniform letter size and shape were achieved; whereas, with the use of circles her students would barely touch these lines, thereby creating letters with non-uniform circular shapes.



19. HOW CAN A CHILD BE HELPED TO ACHIEVE A UNIFORM SPACE BETWEEN PRINTED WORDS?

When students start to print words, they often have difficulty knowing how far apart to place the last letter of one word and the first letter of the word following. In some cases words will be unevenly spread out across the page, while in other cases, the words will be merged into one long string of letters. In order to help students overcome this problem, teachers might suggest that they place the index finger of the non-writing hand after the last letter of the word just completed, and then print the first letter of the next word to the right of that finger. In this way, a uniform acceptable space is achieved.



Teachers might also consider using graph paper on which students can put one letter per block, leaving one block empty between words. Through the use of graph paper of various grid sizes, the size of the letters can be reduced as the child's motor skills develop.

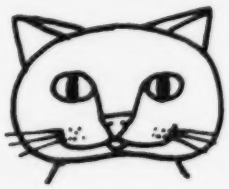
20. HOW IMPORTANT ARE BODY POSTURE AND HAND AND PAPER POSITION IN FACILITATING A HIGHLY LEGIBLE HANDWRITING STYLE?

Some educators have suggested that many of the difficulties students encounter with handwriting arise from improper body posture and hand and paper positioning, insofar as improper body balance puts undue strain on certain muscle groups, causing a general state of body imbalance. Recommended positioning, therefore, is said to reduce muscle and eye strain, thereby ensuring a more flowing and natural writing style. Those writing specialists typically suggest that for right-handed children the bottom left corner of the paper should point to the navel, while for left-handed children the lower right corner should point to the navel. The free hand should rest on the bottom half of the paper to ensure an unobstructed visual field and good body balance, which promotes muscle relaxation for a flowing hand. The elbow and forearm should rest on the writing surface, and the feet shoud be kept flat on the floor. The body should be slightly turned to the free hand side and the eye kept approximately 40 centimeters from the paper. Ideally, it is argued, the writing surface should be inclined towards the writer at an angle of 20 degrees from the horizontal.

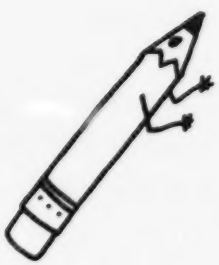
It is also recommended that the pencil or pen be held between the thumb and second finger, with the index finger gently curved and resting on the writing instrument. Holding the writing instrument loosely is also encouraged, insofar as it prevents undue pressure on the writing point, thereby preventing increased tension and fatigue for the finger muscles.

21. **HOW CAN A TEACHER HELP STUDENTS REMEMBER BASIC RULES FOR POSTURE, PENCIL HOLDING, AND PAPER POSITIONING?**

Using poems, such as those presented below, is one way that teachers can present easy-to-memorize rules for proper body posture, pencil holding, and paper positioning. Children could be asked to go through the correct motions suggested in the poems as they are recited aloud by the class. They could also be asked to write simple poems of their own.



Sammy Says:
Cramping your fingers
And slumping in your seat
Will make you a printer
Whose work is far from neat



Peter Pencil Says:
Circles are round
And lines are straight
Both can be found
In work that's first rate

4 Handwriting Instruction in Grades 3 to 6

22. AFTER CHILDREN HAVE LEARNED TO PRINT IN KINDERGARTEN, GRADE 1 AND GRADE 2, WHY MUST THEY THEN LEARN CURSIVE WRITING IN GRADE 3?

Although we tend to take the grade 3 transition from printing to writing for granted, there are a few educators who question the wisdom of this practice and advocate the exclusive use of either a printed, written, or italic script. Those who recommend that writing be taught from Kindergarten onward maintain that a switch from printing to writing may be especially harmful to children with learning difficulties, since they are forced to learn a very different form of written communication before they have completely mastered the original one. Through the teaching of writing only, they argue, such frustration can be eliminated. In addition, they suggest that students would begin with a writing form having a natural rhythm that promotes a more automatic writing style than does printing.

Those who favour an all-printing program suggest that if the goals of handwriting are speed and legibility, then both of these goals can be achieved as easily through printing as through writing, with continued practice.

Other educators argue that an italic script is more easily mastered than printing, and that it combines the best of both printing and writing styles. By modifying print script through slant and the joining of letters, it is possible to create an italic script that builds on the basic print letter forms and leads to a legible flowing adult writing style.

Those who advocate the dual writing system (i.e., both printing and writing) argue that both printing and writing are necessary for students since they serve different purposes for the developing child and the mature adult. The simple lines of printing are said to be more easily manipulated by the younger student, but nevertheless remain part of an inferior mode because they are slower to form than the lines of writing, are more tiring for finger muscles, and cause words to look disjointed. For these reasons they conclude that printing should be viewed primarily as an initiation to a more complex and rapid adult writing form.

A Canadian study attempted to resolve this debate by comparing the effects of printing and writing styles in terms of reading and writing speed, detection of spelling errors, and reading comprehension. Analysis of the data showed no significant differences between the two handwriting groups in any of these areas. Hence, the debate remains unresolved.

It is our belief that the average student is capable of mastering both writing styles and can use them for differing purposes. Printing is not usually completely abandoned after grade 3, but is used in later years for such activities as labelling diagrams in biology and maps in geography, thereby serving a useful purpose well beyond the early elementary grades. Cursive script is an important alternative, which, in the public's mind, is the appropriate form of writing for adults.

23. WHAT AIMS AND OBJECTIVES SHOULD TEACHERS HAVE IN MIND WHEN TEACHING HANDWRITING IN GRADES 3 THROUGH 6?

With the introduction of writing in grade 3, the obvious initial objectives are to have students recognize the basic upper and

lower case written letter shapes and to memorize them for future recall. Once the mechanics of individual letter formation have been mastered, the next objective is for students to learn how to join the individual letters into complete words. Although most letters join fairly easily, there are some problem combinations such as "br," "oa," and "os" which require additional drill and practice.

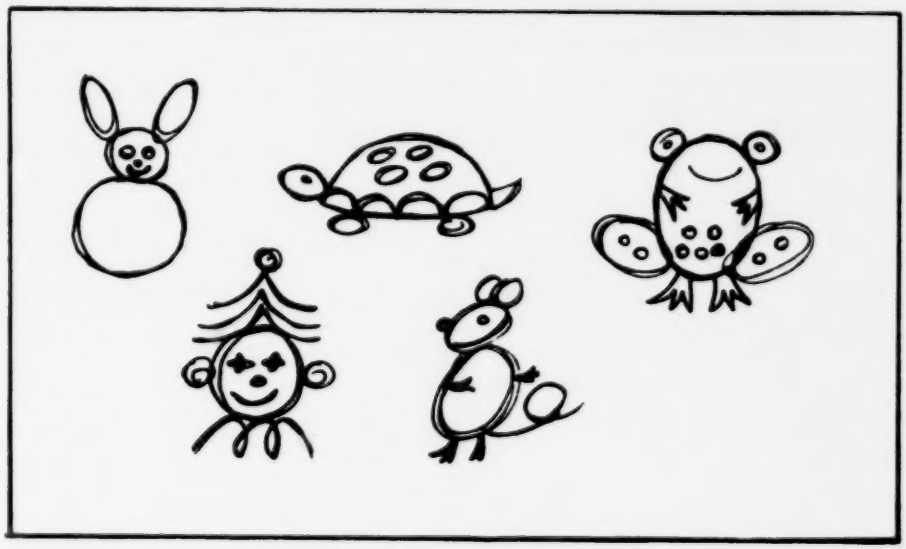
Sometimes teachers begin writing instruction with a vertical style and then switch to a forward slant in grade 4. When forward slant is introduced, there is the additional consideration of uniformity of the writing angle, which may take some time to master. In our opinion, it is better to begin instruction with the desired writing slant, since the use of first a vertical form of lettering and then a slanted form of lettering requires students to learn to write twice. Often, children taught a vertical cursive script never make the transition to a slanted form and develop a vertical style of adult writing. While this style is popular in England and Europe, it has never been in accord with North American taste.

In grades 4 and 5, typically less time than in earlier grades is devoted to handwriting instruction in all schools. Teachers, though, should still be concerned with legibility in written work and emphasize increasing fluidity and speed. These grades are seen to be a time for refinement of writing skills, with attention placed on consistency in slant, spacing, and size. Teachers must also be aware of the importance of the total organization of written work at this time and encourage students to produce a highly legible and visually appealing finished product. If time permits, teachers might consider devoting some time to the practice of printing, since students are quite often expected to print alphabet characters on posters, graphs, map work, and displays.

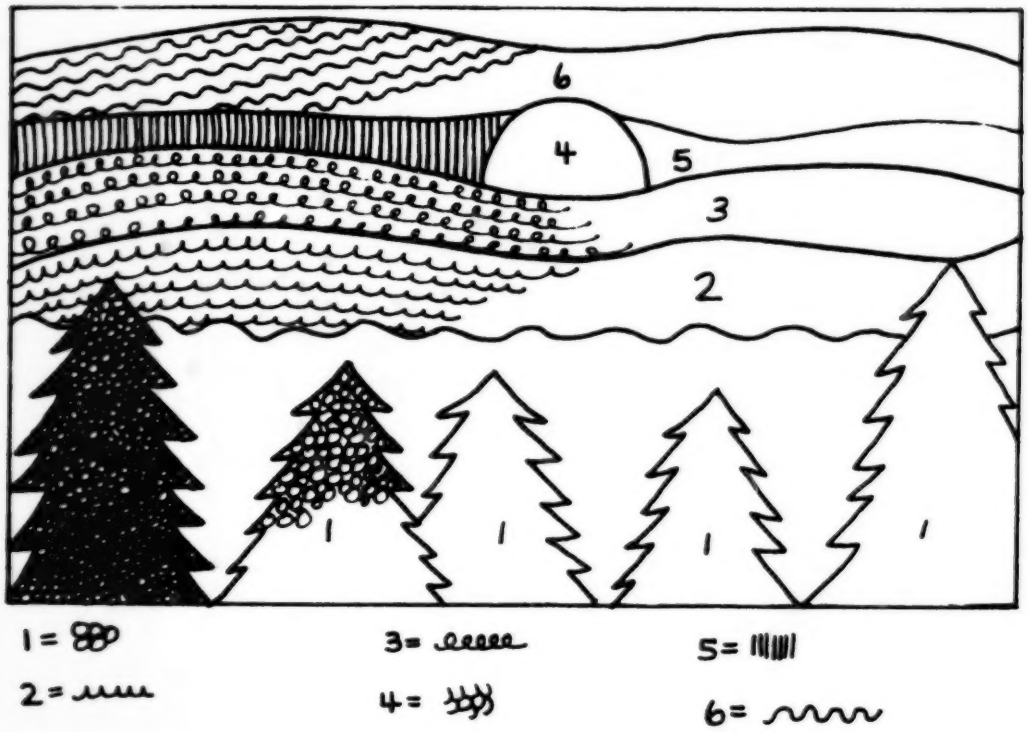
In the upper elementary grades, much individuality is often expressed in handwriting, with students incorporating various artistic flourishes in their style. Most teachers believe that such individuality is quite acceptable as long as the writing remains legible. Indeed, this new interest in style is often seen to result in a greater pride in the work completed by the student.

24. WHAT SORTS OF READINESS ACTIVITIES COULD BE EMPLOYED BY TEACHERS WHO ARE HAVING STUDENTS MAKE THE TRANSITION FROM PRINTING TO WRITING?

Because the movements of writing entail continuous circular motions, educators have developed practice exercises in these movements, which result in simple drawings such as those illustrated below. This approach is much more interesting and meaningful to a child than is the constant repetition of traditional drill exercises (*eeeeee*).

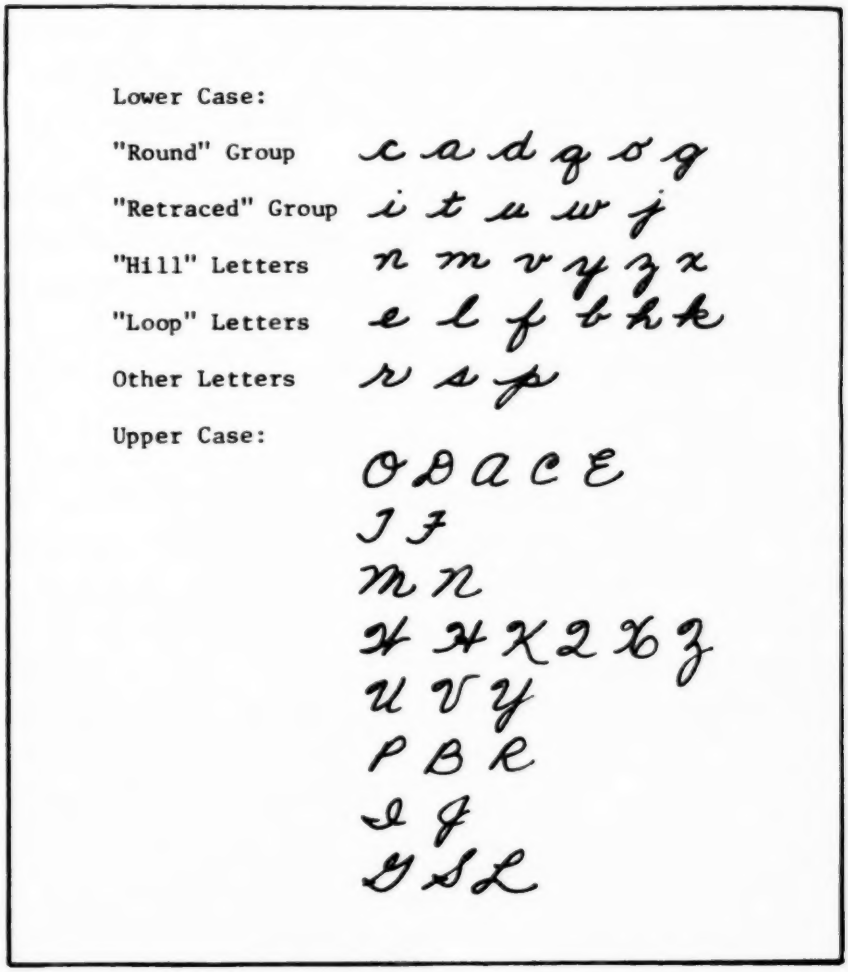


Teachers might also consider using a picture outline, such as the one illustrated below, whereby students use colored pens to create interesting pictures, while at the same time they perform writing readiness exercises.



25. **WHEN HANDWRITING IS BEING TAUGHT TO STUDENTS FOR THE FIRST TIME, SHOULD THE ALPHABET LETTERS BE PRESENTED IN ANY PARTICULAR SEQUENCE?**

Although many teachers begin with the letter "a" and work all the way through the alphabet to the letter "z", many also group letters together into "families," which share common formational characteristics. It is felt that through observation of similarities among letters within the families, letter formational skills can be transferred from one letter to the next. A typical series of family groupings is presented below.

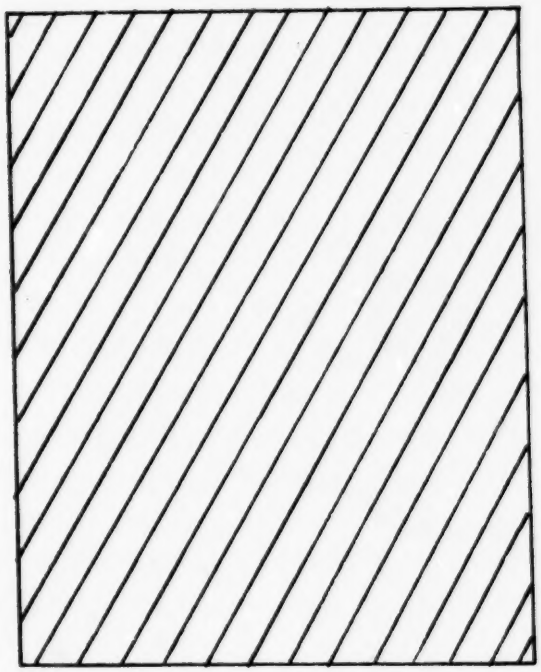


26. WHAT WRITTEN LETTER FORMS ARE TYPICALLY USED BY TEACHERS IN ONTARIO SCHOOLS?

The upper and lower case written alphabets shown in the answer to question 25 are typical of those currently in use in Ontario schools. Invariably, model letters with a slant of about 20^{o} are given, although instructional methods sometimes result in the development of a vertical writing style. Common variations on the letter forms result from the inclusion or exclusion of loops on letters such as *p*, *g* and *f*. Some prefer the aesthetics of "loopy" styles, while others insist that too many loops reduce legibility and speed.

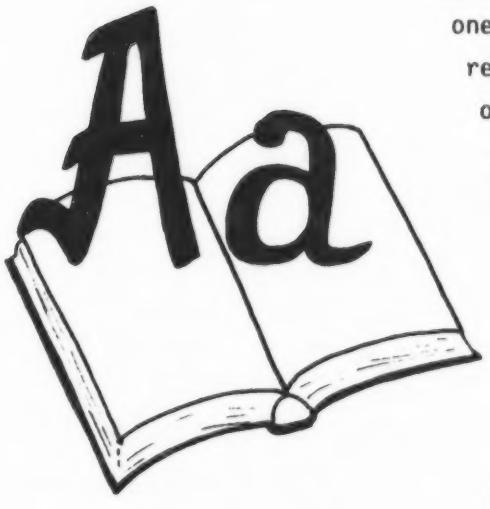
27. HOW CAN STUDENTS BE HELPED TO MASTER A UNIFORM SLANT IN THEIR WRITING?

In order to help achieve a uniform slant, "slant guides" or sheets of diagonally lined paper can be placed under the writing sheet. By following the direction of the diagonal lines, the students can be assured, in the initial phases of learning to write, that the forward slant of their letters is correct.



As noted earlier, if a slanted form is desired, instruction should begin with a slant. If a vertical form is first used, many students will not be able to make the transition because their muscles will have developed automatic movements. Just as developing a good tennis or golf stroke requires the making of desired movements from the start, so does handwriting.

28. HOW CAN TEACHERS MAKE HANDWRITING INSTRUCTION IN THE UPPER ELEMENTARY GRADES MORE INTERESTING FOR THE STUDENTS?



In order to make handwriting instruction more interesting for her Grade 4 class, one teacher decided to have students research the origins and development of the alphabet, examine braille documents for the blind, and learn basic sign language for the deaf. In this way, her students began to realize that printing and writing were only two means of communicating effectively with others. Both the teacher and students involved enjoyed this particular approach to handwriting instruction, with the teacher feeling that student motivation in handwriting exercises had improved significantly.

5 Evaluation of Students' Handwriting

29. WHAT IS THE BEST WAY TO EVALUATE AND CORRECT A STUDENT'S HANDWRITING ERRORS?

When letter forms are taught initially, teachers should watch the students' arm and hand movements carefully in order to correct any improper motions and to offer assistance when required. The teacher might begin by guiding the child's hand over a model of the proper letter form in order to provide the child with feedback about correct arm and finger movements. Where copying and tracing exercises are used in the early grades, teachers can use red ink to make corrections over the letters improperly formed by children, so that they may see where their letters differ from the accepted models produced by the teacher.

Teachers may also choose "writers of the week", special honors given to those students showing the greatest improvement in handwriting quality during one particular week. Report cards sent home to parents typically have a handwriting category in which teachers can indicate the students' ability in this area. Many teachers feel that all work should be evaluated for this grade, and hence both daily work and special writing assignments are considered. In the past, students' writing samples were compared with some absolute rating scale, with higher grades given to those students whose writing conformed most to that given on the rating scale. Today, there is a tendency to evaluate students' handwriting on the basis of their past work, giving higher grades to those students showing the greatest improvement over time.

In the upper elementary grades, more student self-evaluation is expected. This is often accomplished through the use of "Self Evaluation Checklists," such as the one given on the next page,

MY HANDWRITING CHART NAME: _____

	Print either yes or no in the space	Sept.	Nov.	Jan.	Mar.	May
1.	Capital letters are twice as large as small letters					
2.	The differences among o's, c's, a's are clear.					
3.	The round parts of m's, n's and u's are clear.					
4.	Loops on f's, j's, g's, y's are clearly drawn below the line					
5.	Loops do not intercept writing on the lines above and below.					
6.	T's are crossed.					
7.	I do not use a circle to dot my i's					
8.	Letters are not crowded.					
9.	Letters all slant in the same direction.					
10.	Words are separated by clearly defined spaces.					
11.	There are good margins.					
12.						
13.						
14.						
15.						

on which are listed specific aspects of handwriting to be scrutinized for errors. Many teachers in the upper elementary grades suggest that students quickly develop their own individual style, which should not be altered as long as the writing remains legible. Where problems in legibility occur, however, teachers most often suggest altering letter and word formation in order to correct the shortcomings.

30. ARE THERE ANY GUIDELINES THAT INDICATE HOW FAST A CHILD SHOULD BE ABLE TO WRITE AT ANY GIVEN GRADE LEVEL?

Some Ontario school board guidelines for handwriting instruction do include "speed guides" such as the one presented below; however, since handwriting skill is determined by an individual's level of perceptual and muscular development, it seems senseless to frustrate children by having them compete with an arbitrary speed guide, or to sacrifice legibility for faster speed.

Gr. 3 =	40	letters	per	minute,	or	1.7	sec.	per	letter
4 =	50	"	"	"	"	1.2	"	"	"
5 =	60	"	"	"	"	1.0	"	"	"
6 =	67	"	"	"	"	.9	"	"	"
7 =	74	"	"	"	"	.8	"	"	"
8 =	80	"	"	"	"	.7	"	"	"

Speed Guide for Grades 3 to 8

6 Special Adaptations for Left-Handed Students and Children with Learning Disabilities

31. IF CHILDREN SHOW A PREFERENCE FOR THE LEFT HAND IN DOING VARIOUS TASKS, SHOULD THEY BE ENCOURAGED TO USE THAT HAND FOR HANDWRITING?

Yes, definitely. Recent research suggests that hand preference is not the result of habit or conditioning, but the result of the complex organization of the child's brain. The human brain is composed of two walnut-like sections or hemispheres that are joined together in the central region. In many left-handed students, the brain functions usually carried out in the left and right hemispheres of right-handed individuals are reversed, although this is not true in every case. In some instances, the same pattern of brain organization that is found in right-handed individuals is present, although the left-right differentiation is less pronounced. Much more research into this topic must be completed before any conclusive statement can be made about the effect of brain organization on hand preference; however, it appears relatively conclusive that a child's initial hand preference is not determined by habit or environmental influences, but is innate.

32. WHY DOES HANDWRITING SEEM TO CAUSE SO MANY PROBLEMS FOR LEFT-HANDED STUDENTS?

Although the left-to-right direction of writing across the page is the natural outward motion for right-handed individuals, the natural outward motion for left-handed people is in the opposite direction (i.e., from right to left). Therefore, in order for left-handed students to have the same advantages as right-handed students, both the direction of the writing and its forward slant would have to be reversed. Left-handed students, therefore, must

adapt themselves to a writing style designed for a right-handed world, even though approximately 11 percent of all school children in North America are thought to be left-handed.

Further disadvantages arise because windows are typically placed on the left side of the classroom in order to provide proper lighting for right-handed students. Because such an arrangement can cause the left-handed students to shadow their own work with the writing hand, it is suggested that left handed children be placed as far away from the window as possible in order to minimize this problem. By providing these students with left-handed desks, scissors and other equipment, potential frustrations can be further eliminated.

33. I'VE NOTICED THAT SOME LEFT-HANDED STUDENTS WRITE IN A "HOOK HAND" POSITION WITH THEIR HAND POSITIONED ABOVE THE WRITING LINE; SHOULD THEY BE ALLOWED TO DO SO, OR SHOULD THE TEACHER ATTEMPT TO HAVE THEM WRITE WITH THEIR HAND BELOW THE LINE?

Most teachers in Ontario schools seem to discourage such a hook hand position among their left-handed students in order to prevent their writing hand from trailing over the written words, thereby smearing pencil and ink, and hindering the eyes from seeing what has just been written. Some teachers are less adamant on this point and allow the child to maintain the "hook" if complications arise when attempting to write below the line.

A recent study found that not only was hand preference related to brain organization, but preference for a hooked position among left-handed individuals was also related to the organiza tion of their brains. This finding suggests that it may be unwise to force left-handed students to write from below the line, if they are more comfortable writing in a hooked position, although much more research is needed before a definitive answer to this question is obtained. We recommend that teachers help

these students find the most comfortable and easy way to write, without putting them under undue stress.

One of the most common recommendations for left-handed writers is to angle the paper so that the lower right hand corner points to the navel. This paper position is the direct opposite to that recommended for right-handed students, in which the lower left corner points to the navel. We have seen that for left-handed students who write below the line, this paper positioning is fine, but for those left-handed students who write with a hooked hand, the writing act becomes even more uncomfortable, since the hand must hook further in order to produce script on the line. Reversing the angle of the paper to that recommended for right-handed writers, however, makes the act of writing much easier for these students, and also allows them to see the script that they are producing, and to avoid smearing the ink. In essence, by reversing the angle of the paper, we change the "hook" position into a "semi-hook" position.

34. HAS ANY RESEARCH BEEN DONE ON HANDWRITING INSTRUCTION FOR STUDENTS WITH LEARNING DISABILITIES?

Although there is much to be discovered about the most effective means of teaching learning-disabled students, some research findings have suggested that when providing handwriting instruction for these students, the teacher should use materials that provide good visual feedback, such as tracing and copying exercises using colored green (start) and red (stop) dots as directional cues. Also recommended are oval rather than round shapes for ease of letter formation; increased letter size and spacing for better letter and word discrimination; association of letters with objects of interest to the child; introduction of only one letter per lesson; and instruction in small groups of only 4 to 6 children per group.

Several other researchers have suggested that a form of joined print script or written script may be most easily mastered by perceptually disabled students, because of its connected lines which more clearly indicate that words are units with a fixed ordering of letters, though such an approach may cause problems with letters such as m and n, which have one and two humps when printed, and two and three humps when written. It is also suggested that writing with a forward slant helps these students sense the left-to-right direction of word formation.

It appears that most students who have learning disabilities but who can attend regular schools are able to develop good handwriting. Such an achievement is often prized by these students, who are not able to excel at other academic challenges.

35. WHAT IS THE FUTURE OF HANDWRITING AND HANDWRITING INSTRUCTION IN ONTARIO?

Our schools in large part reflect the public's own attitudes and standards, and this is nowhere more the case than with handwriting. Jokes about the illegibility of doctors' handwriting are standard. Indeed, doctors with neat handwriting are suspect. Good handwriting, like any other skill, takes effort and time to develop. If parents and teachers insist, then our children will develop better handwriting. At present, we ask only for an adequate, legible style, and that is what we get. To be frank, this situation is unlikely to change in the near future, in the face of declining resources and increasing demands for new programs.